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General Articles.

Notes on Some Surgical Conditions of the Head and Neck of the Horse. *

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At the invitation of the Secretary, who has pressed me to record my army service experiences, which were gained in managing the surgical section of two Veterinary Hospitals for nearly four years, I propose to deal with some of the surgical conditions encountered, and intend to confine my remarks for the present to those affecting the head and neck. I have put my remarks into the form of notes, as I cannot pretend to deal with the matter as a specialist, but merely as they occur, with their difficulties, to an everyday practitioner.

Extraction of Teeth.

For this operation the recumbent position is convenient, and now, owing to the Animals Anæsthetic Act, it is obligatory to use a general anæsthetic for the extraction of molar teeth. It is for the purpose of discussing which is the best anæsthetic to use that I have introduced the question of extraction of teeth. The operation itself presents no great difficulty, provided that the operator possesses a good pair of strong molar forceps, and also a pair of root extractors with narrow, almost pointed, jaws; the latter are necessary for dealing with split or broken teeth or roots. The mouth should be opened widely with a gag, which allows one to move the forceps from side to side without hindrance. Personally I prefer to have the nose raised and the poll of the head low on the ground level. I do this by placing one or more sacks, closely packed with straw, underneath the face, so turning the nose up while the poll remains on the ground. Then the mouth should be carefully examined before the forceps are used, and for this purpose an electric torch, or, better still, a dental lamp, is very useful. Having thoroughly explored the seat of operation by sight, and also by touch, one proceeds to apply the forceps, the tongue being kept out of the way by an assistant, who holds it at the corner of the mouth opposite to the side from which it is desired to extract the tooth. The tooth must be grasped as low down as possible, the instrument being forced down gently below the gums; then first loosen the tooth by a carefully graduated lateral movement until a distinct sucking sound is heard. Until this is done it is useless to attempt to lift the tooth out. As soon as the tooth is loosened, one proceeds to lift it out, and for this purpose a lever placed under the forceps, between them and the next anterior tooth, is nearly always necessary. The lifting movement either downwards or upwards, according as to whether an upper or lower molar is being dealt with, should have an inclination in direction towards the middle of the mouth, as this renders it much easier to clear the tooth. By these means one may extract even the fifth or sixth molars with forceps, and thus obviate the necessity of trephining down on the root and punching the tooth out. I would like to emphasise one point. Successful extraction is the result of care, patience and experience rather then mere physical force, though naturally a considerable force must be used as the teeth are so deeply set in the alveolus; but rash, rough methods only result in broken teeth and an unsatisfactory ending.

Now as to the anæsthetic which it is best to use. In my own practice I have always used chloroform, administering the anæsthetic in the usual way until a good anæsthesia is produced, then rapidly removing the muzzle, forcing open the mouth with a gag, and proceeding to extract the tooth as quickly as possible. Usually one is successful in doing this, but in some cases of greater difficulty the anæsthesia has practically passed off before the operation is complete.

* Read before a meeting of the Central Veterinary Society on January 6th, 1921.

Chloroform, therefore, is not an ideal anæsthetic for dental purposes.

It has occurred to me, although I have not yet used it for dental work, that intravenous injection of chloral hydrate would be very suitable, and I am anxious to hear whether anyone present has used it. In the army on several occasions I used intravenous injection of chloral hydrate to anæsthetise vicious horses for shoeing, with quite good results. The apparatus used was an ordinary transfusion set, consisting of a glass vessel holding about 10 ozs., with an opening at the bottom, to which is connected a rubber tube. This tube again fits by a push-on joint to a large and sharp needle with a bore about the size of a knitting needle. The site of injection is shaved and sterilised with tinct. iodi, then the jugular vein is raised by a cord round the neck, and a hard pad placed over the vein. The needle, detached from its tube, is plunged into the raised vein, the point of the needle going in an upward direction towards the head. After puncture a little blood should be allowed to escape to clear the tube from air, then the pressure of the cord should be released, so that the blood flows normally again, although the needle will remain full of blood.

The solution of chloral hydrate I used was 1½ to 2oz. in about 8oz. of warm sterilised water. This is put into the glass vessel, and the vessel held up at a little higher level than the puncture in the vein. The end of the tube should first be nipped and the liquid allowed to fill the tube; then allow a few drops to escape from the end of the tube, so that one is sure all air is expelled from the tube. All that remains to be done is to connect up the tube and needle at the push-in joint, and then the solution flows easily and rapidly into the vein. The effect is very rapid indeed, and a word of caution is needed, for sometimes the horse staggers and falls suddenly before all the liquid has been transfused, so that one must be prepared to get out of the way quickly if necessary. This operation is, of course, done in the standing position, and hobbles when necessary are applied after the animal is on the ground. Usually one can just comfortably complete the transfusion; almost immediately the animal staggers a little, then quietly lies down, and almost directly appears quite comatosed. There is no excitement and no struggling. The anæsthesia generally lasts 20 minutes to half an hour. I have never had any untoward results, but as my experience is limited to a comparatively small number of cases, I cannot speak strongly on that point. One should guard very carefully against allowing any of the solution to gain entrance to the subcutaneous tissue, as this will produce a violent reaction and pus formation. As I said, this form of anæsthesia would appear to be very suitable for dental work, and I hope to use it for that purpose and I shall be very interested to hear if any of the Fellows present have any experience of its use to give me.

Trephining of Sinuses.

I intend merely to mention this in passing, as it is a simple operation presenting few, if any, difficulties. One point I should like to raise is, Why does one nearly always get good results when the sinuses are found to contain pus—even in very large quantities—but seldom any good results when one finds nothing beyond a rather dry membrane with a very evil smell proceeding from the openings? That has been my experience, and I wonder if it is common. I have been inclined to attribute it to necrosis of the turbinated bones, although I have not always been able to locate the necrosed spot. Of course many cases of pus in the frontal and maxillary sinuses are due to caries of one or more molar teeth, and in these cases extraction of the offending molar is necessary to effect a cure, although extraction alone will not get rid of the pus, and so one must trephine as well. For after treatment I consider that nothing is so good as a solution of hydrogen peroxide for flushing the sinuses, although mild solutions of salt or potassium permanganate are good substitutes. I prefer to keep the holes in the bones open with tightly rolled plugs of cotton wool rather than with corks, as is so often done.

Enucleation of the Eyeball.

This is perhaps a somewhat uncommon operation in civil practice, but it is one I was called upon to perform very frequently in the army, particularly during my service in Egypt. I think from a good deal of experience that it is an operation well worth performing in any case were the eyeball is injured beyond useful recovery, for the reason that the animal is saved a great deal of pain, and is also rendered useful for work again at a very much earlier date than if the injured eye is allowed to remain in situ. For operating, the recumbent

position is necessary, and a local as well as a general anæsthetic should be used. As regards instruments one needs only a wire speculum to keep the eyelids open, a pair of good sharp curved scissors and a pair of dressing forceps. When anæthesia is well established, seize the membrana nictitans with the forceps and clip it away from its base with the scissors; then clip through the conjunctiva, which is very strong in the horse, cutting the conjunctiva away from its attachment to the orbit, and also from its attachment to the eyeball as well, and continue thus the whole way round the orbit, thus taking out a long strip of conjunctiva. This will allow a finger to be introduced easily all around the eye and the muscular attachments to be located. Next cut with the scissors the recti muscles, and then by gently levering with the scissors the eye can be lifted out of the orbit, and afterwards the retractor muscle and optic nerve in the "stem" of the eye can easily be cut with the scissors. This completes the first stage.

After having removed the eye, it is next necessary to clear out the orbital cavity thoroughly; all fat and muscle should be removed, but great care must be taken not to wound the fibrous sheath which lines the orbit. It is very seldom much hæmorrhage results from the severing of the optic artery, though in one case I found an aneurism of this vessel, and the bleeding in this case was troublesome and had to be controlled by leaving a pair of artery forceps attached to the stump for some hours. The most troublesome hæmorrhage usually comes from wounding the ocular sheath, and so injuring the vein at the inferior margin of the orbit; but this, with care, should be easily avoided.

If it is desired to bring the eyelids together at the same operation, this may be attempted when there is not too much bleeding, but if there is any considerable hæmorrhage, it is better to wait until a few days later before closing the eyelids.

To close the lids my practice is to rub the orbit thoroughly with "Bipp" paste, fill the orbital cavity with wool, then cut off the edges of the lids with a sharp knife, and put in the necessary sutures. Before tying the sutures remove the cotton wool and put in its place a long thin strip of double cyanide gauze, leaving one end of the strip outside the external canthus. The sutures are then tied and the animal allowed to rise. A coating of flexile collodion helps to hold the eyelids together.

After treatment consists in removing the gauze plug when necessary, usually after two or three days, syringing out with 1-6 hydrogen peroxide, and replacing a small strip of gauze for drainage. If successful, the gauze may be dispensed with in five or six days, and healing is complete in about ten days.

Odontoma of the Temporal Bone.

This is a somewhat rare condition. It is, I believe, found only in the horse, and strictly speaking the tumour is not a true odontoma, as it is nearly always composed of all the constituents of a tooth—enamel, dentine, and crusta petrosa—and not only of dentine as is the case with a true odontoma. The external symptoms of this condition are a slight discharge from a small sinus at the root of the ear. The discharge is often black, or at least quite dark in colour. On probing the sinus one finds that it leads right down to the temporal bone, and there may be a slight swelling over the end of the sinus. On opening the sinus with a blunt-pointed bistoury one may find, besides the dark sticky discharge, a little hair growing on the walls of the sinus. The incision should be extended for the full length of the sinus, and at the bottom one will find what appears to be a malformed molar tooth fixed into a false alveolus formed in the temporal bone. The tumour can usually be extracted fairly easily with a pair of small tooth forceps, in the same way that one would extract an incisor tooth. The bone and sinus should be curetted and dressed with some antiseptic, and then one or more sutures put into the skin if necessary, of course, allowing for drainage from the lower end of the incision. Healing is usually quick and uneventful.

I submit a specimen of this tumour for inspection.

Amputation of the Conchal Cartilage.

This is a very unusual, and may perhaps be regarded by some as even an unnecessary operation. I have found it necessary on several occasions to perform this operation, and the results have been uniformly good. This treatment is indicated where the conchal cartilage has become seriously injured. I suspect in most cases the injury is due to abuse of the use of the twitch, with resultant necrosis of the cartilage, producing a stinking discharge, and incidentally a very nervous, restless condition of the affected

animal. Personally I have come across this condition more frequently in mules than in horses, although I have seen it in both horses and mules. Where the cartilage is in the condition described, I consider amputation the only rational treatment. There is, of course, afterwards, particularly where both ears are removed, a peculiar appearance left; but there is no difficulty in keeping on the bridle, and so there is no interference with the usefulness of the animal. Also I have noticed that after the operation the animal very quickly becomes docile and easy to handle again.

My procedure has been to cast and chloroform the patient, and then shave the lower part of the ear and the hair around the base of the ear. A circular incision is made round the ear about 3in. from its base, and two vertical incisions, one external and one internal, leading from the circular incision to the base of the ear. The skin is then reflected in two flaps until the base of the concha is exposed. The small triangular scutiform cartilage, which is placed at the base of the large conchal cartilage towards its anterior aspect, should then be dissected away from the large concha, because this small cartilage should if possible be left in position. The rest of the cartilaginous structures should then be cut away. There is a good deal of hæmorrhage, especially in mules, but the blood vessels can easily be taken up with artery forceps as one proceeds and ligatured afterwards if necessary. Having properly secured all the vessels and controlled the hæmorrhage, bring over the two flaps of skin and suture them together, place under the flaps a piece of gauze or other material to act as a drainage tube, and allow the end of the gauze to protrude from the lower end of the incision. After-treatment is as for any other clean operation wound, and healing is usually rapid and complete.

Poll Evil.

I do not intend to discuss all the details of this operation which are well known to all present and have recently again been the subject of discussion, but merely to touch on one or two points in relation to it. Casting and a general anaesthetic are of course necessary. I am entirely of the opinion that in all cases where the ligamentum nuchae is involved, resection of that ligament should be practised. I have not, myself, performed this through a mesial incision, but always by making two parallel incisions, one each side of the mane and about 27in. from it. One point I would emphasise and that is that the ligament should be cut through first at the point furthest away from its attachment to the occiput, *i.e.*, one should make up one's mind as to how much of the ligament should be removed and cut through at that point first. If the ligament is cut at its occipital attachment first, it contracts violently owing to its elastic nature and then there is some difficulty in getting away as large a piece as it is desirable to remove.

Another point has struck me about poll evil, and that is that one seldom finds much, if any damage to the ligament in cases where there is fracture of the occipital crest. In these cases my experience has been that removal of the broken pieces of bone and curetting of the rough edges left is sufficient to clear up the condition, and I wonder if that is the experience of the Fellows present. My point is, that where the initial injury is to the occipital bone, it is seldom necessary to resect the ligament; but where the initial injury is to the bursa or ligamentum nuchae, with resultant necrosis, the ligament should always be resected.

I have come to the conclusion that a great deal of ill-success in the treatment of poll evil—I may say the same thing applies to any other fistulous condition—is due to over treatment of the wounds after operation. I strongly disapprove of syringing out the wounds with antiseptics, as I believe this quite fails to render the wounds sterile, and merely results in irritating the tissues and delays healing. After the operation has been completed I like to mop out the wound as thoroughly as possible with cotton wool and then plug it with double cyanide gauze and leave it alone until the next day. By the following day all hæmorrhage will have ceased. I then remove the plug and again thoroughly clean out the wound with *dry* plugs of wool; afterwards rubbing all the exposed tissues very thoroughly with "Bipp" paste, and re-plugging with gauze. This dressing is allowed to remain in for four days, strict injunctions being given to the attendant that the wounds must on no account be wetted. I have the discharge which exudes cleaned off the skin around and below the wound each day with an ordinary warm antiseptic wash, and the skin kept well dressed with oil to prevent blistering from the discharge; but no watery solution is allowed to touch or go into the actual wound. I renew the "Bipp" paste dressing every four to seven days—at first

dressing at the shorter intervals, and, as the case progresses, allowing a longer time to elapse between each dressing, but never making it less than four or more than seven days. This is continued for three weeks. If progress is then good, I drop the "Bipp" paste and dress with a dry powder composed of one part of potassium permanganate to six parts of boric acid, and continue this until healing is complete.

I have no doubt that continual irrigation with saline solution would give equally good results, but that is a method of treatment which is scarcely practicable under ordinary farmyard or stable conditions; whereas the method I have indicated is very simple and easy to carry out under any conditions. I am quite convinced that this treatment gives vastly better results to those I obtained by constantly syringing the wounds out with antiseptics.

There is one other small, yet I think important, point in after treatment which occurs to me, and that is, that the patient should be fed always from a manger and never allowed to feed off the ground until healing is complete. Even after the wounds have finally closed I think a horse that has suffered from poll evil should not be turned out to grass for at least two months, so that all the tissues are given time to settle down and get strong again before they are called upon to bear the weight of the head during grazing.

Discussion to follow.

A Veterinary Surgeon.*

By Solomon Eagle (The *Outlook's* "Critic at Large.")

It is often observed that there have been ages when many Englishmen wrote first-class, and most Englishmen could write interesting, prose. The marks of our Elizabethan and Caroline styles are not easy to define. There was a universal movement of speech just as there is a prevalent tone in our folk-songs. But there was more than that. The style was the man, or, rather, the nation. The habit was to call things what they were, to put on paper what you saw and thought as you saw and thought it. And specialisation had not set in. A metaphor was not considered a waste of space in a "dry" book; personality was nowhere excluded; even State papers were written vividly and racily. To-day every book, as it were, bears a label: "This book is intended to contain good prose," or "this book is not intended to contain good prose."

Now, if there is one place in which one would not look for good, muscular, amusing English that place, I should say, is a modern medical treatise, and, above all, a treatise on veterinary surgery. *Diseases of the Cow, Some Observations on Swine-Fever, Ovine Obstetrics, Notes on Farcy, Glanders, Epizootic Lymphangitis and Anthrax*: confess, reader, that when you see such titles as those on a row of books in a friend's library, you never think of making a closer acquaintance with their authors. Yet, time was when veterinary science, like military science and every other science, was in close contact with the humanities, and when it was not considered strange that an expert writer on farriery should use the tropes of a poet and the periods of a pulpiteer and delight in the exercise of that faculty for good speech with which God had endowed him. I have just been reading a work by such a man. It was published as late as 1687 by J. Hindmarsh, at the Golden Ball, against the Royal Exchange in Cornhill. Its author was Andrew Snape, Junior Farrier to His Majesty. And its title is (I give it in its picturesque fulness), "*The Anatomy of a Horse, containing An exact and full Description of the Frame, Situation, and Connexion of all his Parts (with their Actions and Uses) exprest in Forty-nine Copper-Plates. To which is Added An Appendix containing two Discourses: the one, the Generation of Animals; And the other, of the Motion of the Chyle, and the Circulation of the Bloud.*"

That was Snape's subject; and his manner of writing was sometimes that of the curious Coryat or the waggish Fuller, and sometimes reminds one of the eloquent Taylor or Sir Thomas Browne. He knew his job. He was a practical man if ever there was one; his accounts are clear and first hand, his plates look so good that I imagine them to be still valid. But he had time for reflection, and he saw the horse as part of the Universal Order. You get a flavour of his sententious charm in the introduction:—

> Now, order of dissection requires that you should first begin with the Head, it being the most mobile and excellent part; next that of the Chest, and lastly the Belly; but this (as I have said) is not to be done where there is but one body, for there you must begin with those parts that are most subject to Corruption, wherefor you must first cut up the Lower Belly, then the Chest, and lastly the Head; both which ways are often used, the first being called the way of dignity, and the other of diuturnity; the one being more noble, and the other of a longer durance.

And it was quite natural to him to begin his book proper with a commendation of the horse. "Before I take in pieces this Goodly Creature, It will not be amiss if I just give you an account of all these Parts as they lie in order, beginning with that which first appeareth to our View, and that is the Scarf-skin adorned with hairs, wherein (as a Case) Nature hath wrapped this stately beast."

I never thought I should spend half-a-day reading about the nerves and muscles, the livers and midriffs of the horse. I love this goodly creature. I have even been known to mount this stately beast and, on occasion, he hath caused me to fall. But his interior has never greatly aroused my curiosity. It has taken Andrew Snape to do that, and I could read Andrew Snape on anything. Hear the Royal Farrier on the horse's hair:—

* Reprinted from the *Outlook*, January 22nd, by the courtesy of the Editor.

And hence may be gathered a reason of the shedding of the hair, which is observed to happen in many Horses that have ill keeping, such as your Cart-horses that seldom have any labour bestowed upon them, for want of which dressing to remove the dust which lieth upon the mouths of the pores or at the roots of the hairs, the passages, through which the juice should come that nourishes the hair, are obstructed or stopped, and so like dead Leaves from a Tree in Autumn they drop off, or as untimely Fruit falls before the season of the year requireth it.

If the cholerick humour doth most predominate, then are the hairs of a black, or sorrel or a chestnut colour; If bloud most predominate, then will the Horse be a bright Bay or Roan; If flegme, then the Horse will be of a milk-white or yellow-dun; If melancholy, then will the Horse be of an iron-gray or Mouse-dun. Thus much for the colour of the hairs, next I come to the use of them.

The use of the hairs is, first to cover the skin; secondly, to defend it; thirdly, to be an ornament to it.

Even his most technical pages abound with these charming passages, and on general topics he is always delightful. Take him on germination:——

The Eggs (or Seeds) of Plants being excluded out of the Egg Bed (called a Pod or Husk, or by whatever other name distinguished) requiring further fostering and brooding, are committed to the Earth by the officious Winds or by the industry of Men. This kind Mother having received them into her Bosom, doth not only give them incubation or brooding by her own halituous vapours joined with the heat of the Sun-beams; but doth by degrees abundantly supply what the fruitful Seeds stand in need of.

I said that the old common prose was marked by a general inclination and ability to call a spade a spade, by a readiness to use apt ornament anywhere, by a music to which all men were accustomed. It gained much by the homogeneity of philosophy; everything was looked at in the light of everything else, and God or the dulcimer may meet you on any page of a medical book. But there is often something more—and even now I have not mentioned that adventitious deliciousness that comes from the parade of "knowledge" now outworn or obvious. I mean the suffusion by a reverent and humble spirit, less common among writers now than it was in the seventeenth century, or at any rate less easily disclosed. I can do no better than end with part of a digression that occurs in the middle of the chapter on the Muscles:—

I hope no curious and ingenious Anatomist, that knows how much time and pains is necessary to be spent upon the exact examination of any one Part, will think me sluggish and supine, that I have not in those few years that I have applied my self to this study, attained as yet to the full knowledge of all the Parts of this Beast that I anatomise. And as on the one hand I hope I may my self attain to greater skill in this Art than I have yet ever arrived at; so on the other hand I would not be guilty of the vanity of thinking to monopolise it, but shall both desire and hope that others will make up what I shall leave imperfect. But thus much I hope may serve for mine Apology with all ingenuous Men, I shall therefore return from whence I have digressed.

What could be better expressed?

Steps are being taken by the British Friesian Cattle Society to allow the descendants of an unregistered black and white cow to become eligible for entry in a supplementary register to the Friesian Herd Book.

Liberal supplies of hay continue to reach the London market. Prices are easier for inferior kinds.

The Veterinary Record.

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TUBERCULOSIS VACCINATION.

The problem of tuberculosis eradication has, since the termination of the war, been the subject of earnest discussion among scientists and social workers. The war itself demonstrated the ravages which the "white scourge" is capable of inflicting upon the standard of fitness of a nation, and bearing in mind the expenditure which nations have readily incurred in providing means of destruction, those who have had the welfare of humanity at heart in all civilised countries have devoutly advocated that no resources or interests should be spared in curbing the onslaughts of this dreaded plague of man and his animals. Naturally, attention has been directed to those products of human food which are most likely to harbour the germs of the disease, namely, meat and milk, and Governments have taken steps to see what measures can be adopted to secure a wholesome supply of these products. We have in the United States of America, for example, the system of tubercle-free accredited herds propounded on a large scale, and in this country some eager workers contemplate steps in the same direction. The lay enthusiasts, in particular, proclaim measures for the better sanitary accommodation of animals, in the belief that better ventilation and cleanliness might diminish the incidence of tuberculosis—oblivious largely to the fact that this infestation with a certain minute germ is not more likely to be got rid of by more air and room than is an infestation with rats or any other gross vermin. We have therefore to cope with the edifice which harbours the infestation, either by destroying the whole host structure, by making it most inhospitable for the unwelcome invaders, or by killing them off by some subtle poison. The chemo-therapeutist has so far been baffled in his endeavours to discover a drug or poison that will kill off the tubercle bacillus effectually in the body of the host; the destruction of all affected animals would not be practicable on economic grounds on account of the widespread prevalence of the disease; and, until quite recently the problem of rendering the animal body resistant to invasion was considered for certain good reasons too difficult or too dangerous in its ultimate effects on man or

other animals, although it had indeed been found quite capable of accomplishment under certain conditions by laboratory workers. We were therefore relegated to formulating measures depending upon the isolation and segregation of affected animals, the diagnosis of which we were fortunately in a position to carry out by means of that invaluable reagent tuberculin, and we might thus take steps to ensure that by repeated testing a sound herd was kept clean. The promulgation of these measures, however, must necessarily tax the patience of the stockowner and be slow in bearing fruit, although on logical grounds there could be no question as to the eventual success of a policy of this kind.

During the past few weeks attention has suddenly become focussed again on methods of immunisation against tuberculosis Not that there is anything essentially new concerning this matter, for ever since KOCH isolated and grew the specific bacillus from the lesions of the disease, workers have persistently endeavoured to find out whether it could be rendered so tractable in the laboratory that when used to infect susceptible subjects it would not produce a fatal disease, but on the other hand set up a mild infection that would bring about an immunity against a natural attack—on the general lines originally laid down for infectious diseases by the great master PASTEUR. But, somehow, the conclusions arrived at by the earlier workers were that the tubercle bacillus was obstinately stubborn in this respect; its peculiar waxy composition was held to make it most insusceptible to the action of physical and chemical agents and to absorption or elimination by the tissues, and even though the subject might recover from one attack, it possessed no useful degree of immunity against a second, subsequent, attack. These results were obtained mostly, however, on the small laboratory animals, which are known to be bad subjects upon which to study these phenomena.

Soon, however, it was shown that a high degree of resistance can be produced in animals against tuberculosis infection; cattle affected naturally with tuberculosis were found capable of withstanding repeated large doses of highly virulent tubercle bacilli that would certainly kill a control animal, and, later, when it was discovered that the types of tubercle bacilli harboured by the several animal species differed rather widely from each other in virulence for any one given species, methods of obtaining protection against the natural disease immediately suggested themselves. Thus cattle exhibit a very high degree of tolerance towards the human type of organism, and a method of vaccination, which is associated with the name of VON BEHRING, was devised depending upon the inoculation of virulent human tubercle bacilli into the veins in cattle during early age. This procedure was found to confer on the animals quite an appreciable degree of immunity towards both experimental and natural infection—an immunity which lasted for up to a year or eighteen months; the vaccination had then to be repeated if the duration of the immunity was to be extended. Unfortunately, this method presented a serious drawback inasmuch as the vaccinated animal harboured in its system in a virulent form the inoculated bacilli for six months or more after inoculation, and they were liable to be excreted also in the milk and fæces, and thus constituted a source of human infection. Some highly reputable authors even went as far as to say that immunity against tuberculosis only lasted while the host carried in its system in a latent form the virulent germs of the disease. In order to mitigate or circumvent the above drawback, other investigators attempted the use of bacilli of the avian type for vaccination, with results that were again favourable, but even this method was not altogether free from objection. Virulent ox bacilli had even been employed in attempted immunisation, administered by the digestive tract, but whatever chances of protection might lie in this method its general use could obviously not be recommended.

Thanks to the persistence of some renowned bacteriologists, it now appears, however, that the tubercle bacillus is capable of modification in the same way as other disease-producing organisms, although the transformation has required the employment of special means on account of the resistance of the organism. In 1908 KLIMMER claimed to have rendered the human bacillus innocuous for mammals by passage through the body of the salamander, and recommended the use of products therefrom for vaccination; but his claims have not been substantiated by other workers. Again, ARLOING endeavoured to obtain a modified type of organism by causing it to grow uniformly throughout a liquid medium at a relatively high temperature, and good results were claimed to have been obtained in the vaccination of cattle with it.

Of special importance, however, are the researches which CALMETTE and GUERIN have patiently undertaken in this connection for the last twelve years or more, even when their experiments had to be carried out under the eyes of the enemy invader. We have already published in this Journal (January 29th, p. 93) the results of these authors' investigations. In a small experiment which stands the test of the closest criticism, they proved that young cattle inoculated yearly with a vaccine consisting of bovine tubercle bacilli rendered avirulent by causing them to grow for a large number of generations on bile-treated glycerinised potato were capable of withstanding completely the effects of exposure to natural infection in the form of continuous close cohabitation with naturally affected cattle. The vaccine was, moreover, harmless for man, and so did not possess the inherent disadvantages of the earlier methods of vaccination. As far back as 1908 these workers published an account of experiments on cattle with these bile-treated bacilli, with which merely a febrile reaction was set up as a result of inoculation, but no tuberculous localisations, and an immunity against experimental inoculation was produced. They now propose to undertake more extensive investigations upon the applicability of the system of vaccination to large herds of cattle, and even for the protection of the human race; researches in the latter direction are to be carried out, we learn, on monkeys in the tropics.

Of no less importance is the system of vaccination for both preventative and curative purposes just made known by the distinguished Japanese bacteriologist SHIGA. This worker had been conducting experiments for some time on the chemo-therapy of tuberculosis, and approached the question of avirulence by quite an original route. It is well known that micro-organisms may acquire in the course of time a high degree of tolerance to many chemical substances, *e.g.*, the aniline dyes, and the salts of copper, iodine, and arsenic. Research was patiently pursued upon the action of these things on the tubercle bacillus in culture for many years; cultures were regularly transplanted every four to eight weeks into glycerine broth containing an increasing concentration of these salts. It was found that in proportion as the bacilli acquired tolerance to progressive doses of aniline bases, for example, they lost their virulence. Trypoflavin, for instance, could be increased in concentration from 1 in 200,000 to 1 in 8,000; and erythrosin from 1 in 20,000 to 1 in 800. A further important condition, besides this question of avirulence, was how to make the vaccine easily absorbed. This had always been an obstacle to researchers, in so far as the tubercle bacillus was concerned. SHIGA was able to achieve this condition by the addition of a little immune serum to the finely triturated bacilli, and in these circumstances the anilinised cultures were all easily absorbed without infiltration or induration. Preliminary therapeutic experiments were made on infected guinea-pigs, and after these animals had been submitted to an initial course of treatment with a specially-prepared dead vaccine, they were given doses of the living vaccine. Treated guinea-pigs lived distinctly longer than the controls, and during treatment the lesions showed marked tendency to healing and fibrous encapsulation.

The vaccine was then tried in very much the same manner on human beings during the early stages of tuberculosis, namely, such subjects as had been exposed to infection, those of consumptive appearance, those with chronic tonsilitis, etc. SHIGA demonstrated in particular the frequency of infection of children *via* the hilus glands of the neck and the importance of treatment during this stage. The course of treatment lasted four months, with weekly injections, and at the end the patients invariably showed great increase in weight, and, it would seem, had completely recovered. In this way SHIGA hopes to bring about the suppression of tuberculosis.

Abstracts and Reviews.

The Blood of the Domesticated Animals.

Some veterinary surgeons at the Physiological Institute of the University of Giessen are studying this subject, and publishing their results from time to time. A particular reason for their work can be found in the discoveries of BRÜNNINGS (1903) and BÜRKER (1913) that the blood-counts made with the Thoma-Zeiss type of hæmocytometer are invariably too high. They showed that a series of errors attends the use of the instrument, of which the most significant is due to the irregular distribution of the erythrocytes over the counting surface. Both devised hæmocytometers for which they claim that their use is unattended by the errors in question, and the one of BÜRKER is, undoubtedly, an excellent apparatus.

It consists of a special counting-chamber, a little warming chamber, a blood-letting instrument, a pipette for measuring 25 c.m. of blood, a pipette for measuring

4,975 c.mm. of diluting-fluid, two round flasks for mixing the blood and fluid, two pipettes for transferring the diluted blood to the counting spaces, and a form for entering results. The counting-spaces are filled by capillarity.

MARLOFF (1919) compared the results of the enumeration of the red-cells which were given by the Thoma-Zeiss and the BURKER methods. He used a series of animals of different species. His method was to mix 25 c.mm. of blood with 4,975 c.mm. of Hayem's solution. He then filled a counting-chamber after the Thoma-Zeiss method; which is to place a drop of the diluted blood on the counting-surface, and then put the cover-slip on top of the drop. After he had counted the cells over 320 squares, he used the same chamber for a fresh portion of the same sample of diluted blood transferred according to the BÜRKER method, which is to allow it to flow by capillarity under the clamped cover-slip. His results were as under:—

Kind of Blood.	Erythrocytes, in millions, after		Difference in %
	Bürker.	Thoma.	
Frog	0·452	1·066	136
Dove	2·80	3·79	35
Man	4·30	4·99	16
Dog	6·65	8·21	23
Rabbit ...	5·85	6·35	9
Horse	7·32	8·19	12
Pig	6·20	7·01	13
Ox	6·51	7·01	8
Goat	13·10	13·92	6

In addition to making the blood-counts, he estimated the hæmaglobin contents of the blood-samples. To do this, he collected another 25 c.mm. from each cut which furnished material for blood-counts, and diluted that volume with 2,475 c.mm. of 0·1% sodium carbonate solution. He then ascertained the Hb. content by means of Bürker's Spectro-photometric method (1911).

Also, he observed the rate of sinking of corpuscles in Hayem's fluid under uniform condition, and he found that it was in direct proportion to their hæmaglobin content. Thus, a frog's corpuscle contained 322×10^{-12} gm. of Hb. and sank 0·375 mm. in one minute, whereas a goat's corpuscle contained 7×10^{-12} gm. of Hb. and sank only 0·041 mm.

This explains why the error is so much greater when one uses a Thoma apparatus for frog's blood than when one uses it for goat's blood.

MARLOFF also states that Hayem's fluid is an unsuitable one for the suspension of ox or goat corpuscles, as they tend to agglutinate and become distorted in it.

KÜHL (1919) has presented the result of the detailed examination of the blood of 10 horses, 10 cattle and 10 dogs.

He collected the blood from the jugular veins of the horses, and from the ear-veins of the cattle and dogs. The blood was allowed to flow into a hollowed-out paraffin block, and then mixed with a little hirudin. The following dilutions were made on the spot:—25 c.mm. of blood with 4,975 c.mm. of Hayem's solution; 25 c.mm. of blood with 2,475 c.mm. of 0·1% soda solution, and 25 c.mm. of blood with 475 c.mm. of Türk's solution. The dilutions were made in small stoppered flasks suitable for transference to the laboratory.

Erythrocyte-counts were made according to the Bürker method from the 1 in 200 solution.

Hæmaglobin estimation by spectro-photometric method was made from the 1 in 100 solution.

Leucocyte enumerations were made from the 1 in 20 solution.

Differential leucocyte-counts were made as follows: By means of a paraffined glass rod a drop of blood was transferred to a cover-slip, another cover-slip was brought in contact, then, when the blood had spread, the two were quickly drawn apart. The films were dried in air, fixed for three minutes in May-Grünwald solution, stained for a minute in the same after its dilution with distilled water, then for seven minutes in Giemsa solution (six drops to 4 c.cm. of distilled water), washed, dried, and mounted in neutral Canada balsam.

The same preparations were used for a rough estimation of the number of blood-platelets present.

Finally, the refractive index of plasma, for the estimation of the albumin content, was ascertained.

The average results of the examinations were as under:—

	Erythrocytes in 1 c.mm. of blood, in milions.	Hæmaglobin in 100 c.cm. of blood, in grammes.	Hæmaglobin-content of one erythrocyte, in 10-12 gm.	Leucocytes in 1 c.cm. of blood, in thousands.
Horses ...	6·94	12·4	18	10·30
Cattle ...	5·72	10·8	19	7·90
Dogs ...	6·59	15·8	24	12·60

	Kinds of Leucocytes.					
	Lymph-ocytes.	Mono-nuclears and Transi-tional.	Neutro-philes	Ersino-philes.	Baso-philes.	Thrombo-cytes.
Horses ...	38	4	54	4	<1	Few
Cattle ...	64	10	21	5	<1	Many
Dogs ...	25	8	57	10	<1	Few

From so small a number of animals the author is unable to draw safe deductions as to the effect of age and sex on the blood.

He calls attention to the difficulty of making good films of ox-blood; generally the erythrocytes are distorted. One notices, too, the richness in lymphocytes and thrombocytes of ox blood.

Compared with the findings of previous investigators, the above results show a diminished erythrocyte count, but the leucocyte counts are similar. KÜHL claims that these are the first published figures of the Hæmaglobin content of the corpuscles of these domestic animals.

More recently still, FRITSCH (1920), working on the same lines, has published the results of the examination of the blood of the rabbit, hen and pigeon.

BRUNNINGS, W. Ein neuer Apparat für Blutkörperchenzählung. *Pflüger's Archiv für Physiologie.* 1903. Bd. 93. S. 377.

BÜRKER, K. Zählung und Differenzierung der körperlichen Elemente des Blutes.—*Tigerstedt's Handb. d. physiol. Methodik.* 1913. Bd. 2. Abt. 5. S. 36.

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MARLOFF, R. Die früheren Zahlungen der Erythrocyten im Blute verschiedener Tiere sind teilweise mit grossen Fehlern behaftet.—*Pflüger's Archiv.* 1919. Bd. 175. S. 355.

KÜHL, P. Das Blut der Haustiere mit neueren Methoden untersucht.—1. *Pflüger's Archiv.* 1919. Bd. 176. S. 263.

FRITSCH, G. Das Blut der Haustiere mit neueren Methoden untersucht.—II. *Pflüger's Archiv.* 1920. Bd. 181. S. 78.

Clinical and Case Reports.

Vanlaw's Operation for Scrotal Hernia.

Veterinary Surgical Operations—MERILLAT (Second Edition).

Demonstration by W. W. LANG, M.R.C.V.S., *at a meeting of the Lincolnshire and District V.M.A., on October 21st*, 1920.

Definition.—A method of ligating the tunica vaginalis near the internal abdominal ring so as entirely to obliterate scrotal hernia without suturing the orifice itself.

The patient, a two-year old Shire colt suffering from double scrotal hernia, was saved from shipment to the Continent, as he had been purchased for that purpose.

With slight modifications the operation was carried out as described by MERILLAT.

After casting and chloroforming the patient and cleansing the seat of operation with petrol, the incision on the right side was "made in the form of an inverted T, each line of which is about four inches long." The vaginal sac was then freed by blunt dissection as far up as possible, the sac opened and inspected to make certain there were no adhesions—this procedure appeared unnecessary, but the operator considered it wiser to carry it out—and the vaginal process, with its contained cord was then ligatured at the highest possible point. The cord was severed by using the Haussmann and Dunn emasculator (hand forged) for purposes of demonstration, although the use of this instrument was not really necessary. The scrotal wound was then packed tightly with cotton wool and sutured.

The left side was similarly treated, with the exception that the incision represented by the stem of the letter T, *i.e.*, the incision upward and parallel to the cord to give good access to the inguinal canal, was omitted. The first incision on this side appeared to have been more boldly made, with the result that separation of the vaginal process was much more easy, and by exerting careful traction on the cord the ligature was applied high up. Also, on this side packing was done by means of a roll of cotton wool covered with gauze, the upper end supporting the stump of the cord, the lower resting on the floor of the scrotum represented by the sutured wound.

On the day following the operation the patient was rather uncomfortable, but free from fever, but on the second day the temperature went up, and there was considerable swelling. The packing was then removed and for several days irrigation with antiseptics was carried out repeatedly, and saline solution (sod. chlor. lb*ss.* in a bucketful of water) administered by a stomach tube once daily. During the next three days formaldehyde 40 per cent. in one ounce doses was added to the saline, but as the appetite then became impaired, internal treatment was discontinued, for in the operator's experience saline has to be very carefully used when the appetite is in abeyance. An enormous flow of serum from the wounds followed the saline administration, and it is safe to state that without its use recovery in this case would have been extremely doubtful.

Gradual improvement followed, and the colt was sent home by rail on the 13th day after operation. Contrary to the expressed opinion of the members present at the operation, the ligatures had not sloughed out. On the 16th day, therefore, the patient was chloroformed in the standing position, as this was considered the safer method in this particular case, and it turned out to be so, for the animal went down without a struggle, and the stumps of the cords, which had granulated until they had attained the size of fairly large apples, were removed along with the ligatures. The wounds had to be extended backwards to allow access to the cords, which were removed by the emasculator.

Since then the colt has made an excellent recovery, and is a complete cure.

After the completion of the operation Mr. T. J. KEALL, F.R.C.V.S., and Mr. D. COOPER both stated that they had had excellent results by the use of the so-called covered operation. Mr. Cooper operated in a case of double scrotal hernia in a twelve year old stallion, by simply applying a clam to the cord and vaginal process as high up as possible and leaving the clam or clams on for four days.

In view of their remarks, and the absence of sloughing of the ligatured stumps, the following quotations are cited from MERILLAT:—"*The thinness of the sac at the level of the internal abdominal ring is a feature to be kept prominently in mind in all operations for the relief of scrotal hernias.*"

With reference to other methods of operating, MERILLAT says: "Some operators prefer clamping with a wooden clamp. It is our experience that this is a dangerous practice in mature horses, and that the mortality is entirely too high. . . ."

"With all due respect to all of these plans we have always had such splendid success from the simple tying off process that we hesitate to recommend them. . . ."

"If the stump remains viable the ligature will not slough itself loose, and will cause abscess, and probably chronic peritonitis. On this account we emphasize

the tightening of the ligature above all features of the technique."

Demonstrating the use of the stomach tube. (*Further demonstration by Mr. Lang*).—This was first of all done on the hernia patient, in the recumbent position, while he was recovering from the anaesthetic. The tube was passed into the œsophagus in the first instance and afterwards by extending the head into the trachea. The technique was fully explained, and the members invited to test for themselves the resistance to passage down the œsophagus and its absence in the trachea.

A second demonstration, this time in the standing position, with highly instructive remarks, was given by Mr. C. HARTLEY, F.R.C.V.S., a patient of his being available for the purpose.

In addition to the emasculator shown by the operator, Mr. HARTLEY exhibited the Burdizzo castrator and explained its use.

The writer desires to put on record his indebtedness to Mr. HARTLEY for his attention to the hernia patient during his stay at Lincoln.

Association Reports.

Southern Counties Veterinary Society.

THE DINNER.

The meeting of the Southern Counties Veterinary Society at the Holborn Restaurant, on the 9th December (a report of which was published in our issue of January 15th) was followed by a Dinner, at which Mr. J. W. McIntosh, one of the Vice-Presidents, acted as chairman.

The customary loyal toast was duly honoured at the conclusion of the repast, and a little later the Chairman gave the toast of the President. Mr. Livesey, he said, was well known to them all, and the part that he had occupied—the position of President now for several years in succession—was sufficient proof in itself of the esteem in which he was held by the members of the Society. (Hear hear.) There was no doubt that the success of any Society was largely bound up with the personality of its President, but at the same time it was up to the members generally to give the President that support which he was entitled to, and he was just a little afraid that a good many members of their Society had not always attended the meetings as they might have done, and thus had not given their President all the support he was entitled to expect, and which he undoubtedly deserved. (Hear, hear.) Mr. Livesey had thrown himself into the work of the Society and of his profession with great enthusiasm, and it was to him (Mr. McIntosh) a very great pleasure to occupy the position he did that evening and to have the opportunity of proposing their President's health. (Applause.)

The PRESIDENT (Mr. Livesey), in returning thanks, said he was particularly pleased that evening to think he had at last an opportunity of thanking the members of the Southern Counties for the kind way in which they had tolerated him during the many years he had now occupied the chair. It was in March, 1913, he believed that he was first elected to the chair, and he followed a very difficult person indeed, in that he succeeded their old friend the late Mr. William Hunting. Unfortunately, after his first year of office the war broke out, and the Society's activities came more or less to a standstill. The majority of the members were either serving overseas or were busily engaged on Government work at home, but a few enthusiasts backed him by coming to the meetings. and in this direction he would like particularly to thank Mr. MacCormack, Professor Wooldridge and Mr. Samson.

Just before war broke out the Society was also placed at a great disadvantage in losing the services of the late Mr. Todd as secretary. Mr. Archer, who succeeded him, tried his best to make the Society go, but when war broke out he was engaged on Government work and found it very difficult to devote the attention to the duties of the office he would have liked to. Mr. Archer was subsequently succeeded by Mr. Angwin, and since the Armistice they had been struggling to get the Society on its legs again.

He regretted that the members had not been able to attend the meetings better; but there were very good reasons in these days of high railway fares and increased expenses generally. Still he hoped they would be able to get back to the big meetings they had in the old days, as the Society had great possibilities for usefulness in front of it.

The future of all these Societies, in his opinion, depended on the welfare of the National, and it was incumbent on all members of the profession to join their own local Societies, and through those Societies the National, so that the whole profession might be linked up in one body, which would carry weight in the country.

He hoped his successor would have a more successful period of office, and be backed up with more enthusiasm by the members, and that the Southern Counties would regain the position it had in the old days when it was at its zenith. (Applause.)

"The Visitors" was proposed by Major FRED HOBDAY, who said the Southern Counties gave way to nobody in making their visitors welcome, and he hoped they had succeeded that evening in giving them the welcome they deserved. As visitors that evening they were pleased to have with them Mr. Dalrymple Hay, Mr. Bull, and Mr. F. W. Willett, but he also proposed to couple the name of their old friend Mr. Bullock with the toast as well.

In Mr. Dalrymple Hay they had a gentleman who was better known to the profession in India, perhaps, than he was in this country, because it was in India that his chief work had been done. It was Mr. Dalrymple Hay who had been largely instrumental in building up the splendid schools the profession now had at Lahore, in Madras and other centres of that great dependency—schools which he ventured to say were second to none on the continent of Europe.

When war broke out their friend enlisted as a private in the Royal Army Veterinary Corps by putting his age at 35, and for some weeks he managed to hide himself in obscurity. He well remembered the first occasion he met him in France, a crouched up figure in front of an army water cart driving a pair of mules, but he was found; and on the next occasion he saw him he had just passed an examination and was posted to the Guards, where by a curious coincidence he was brought in close contact with Captain Slocock, the son of their old friend who was with them that evening. He was also mentioned in Despatches, and had various other honours given him for attending to horses under fire, and finally he met him a commissioned officer on the headquarters staff.

Mr. Bull, another of their visitors that evening, was the manager of the Live Stock branch of the General Accident Insurance Company, and was very much in sympathy with their profession. What was more, he was also an optimist with regard to the future of their profession.

Of Mr. Willett, the President of the Royal Counties Society, it was unnecessary to say more than that he was known and respected by them all; while as to Mr. Bullock, no name was better known in the whole of their profession than that of the Secretary of their College. (Applause.)

The toast was received with enthusiasm.

Mr. DALRYMPLE HAY said Professor Hobday had had many kind things to say about his work in India, but he had only tried to do his duty. Ever since he first went out to India, in 1878, it had been his one aim to try and stop the cruelty of which he then saw so much, and to improve the veterinary service of that country. Much had been done, but there was still room for great improvement, and this could only be effected by their voicing their

demands in this country. If the people in India saw that those in power wanted the status of the veterinary officer there improved, they would find ways of doing it; but unless they did improve the status and position of the veterinary officer in the Presidencies, they would never get any devout man to stay there. It was only by hammering at the Government at home that they would get the Government to recognise that the veterinary officers, at least for the present, must come from the west. The veterinary cadets that they were now turning out from the schools in India knew how to deal with cattle, but they wanted more than that, they wanted the real article; and the need to-day was for men from England or somewhere where they had some officially recognised training. (Applause.)

Mr. BULL, in the course of his reply, said Professor Hobday had referred to him as an optimist, and his optimism meant recognition by the State, the country, the municipality, and by Insurance Companies. (Cheers). He knew what the veterinary profession meant to his own class of business, and he really thought there was a better future before them; but they would have to be a little bit more like the Irishman, and shout a little louder. (Applause.) He hoped the time was coming when, both individually and as a profession, they would have the prosperity they deserved. (Applause.)

Mr. F. W. WILLETT was sure the Royal Counties Society would wish him to convey their hearty appreciation of the way in which they had received and entertained its president, and he hoped that at no distant date the Royal Counties would be able to return the compliment. They must all feel that these meetings were for their mutual benefit, and it was a great pity that they were not better supported, because it was only by combination and judiciously enlisting the aid of the Press in educating the community at large as to what they had done in the past and hoped to do in the future that they were likely to occupy the position that was rightfully theirs. (Applause.) When they found there was not a single veterinary surgeon on the committee appointed in connection with the proposed new Milk Bill, and only one on the sub-committee, it did seem as if there must be a screw loose somewhere.

Mr. BULLOCK said that he could hardly be regarded as a visitor, since he had now the honour and privilege of paying for his own dinner—(cheers)—but the very generous way in which Professor Hobday had referred to him compelled him to get on his feet and acknowledge the gratitude he felt to him and to them all for the way in which they had received those remarks. It was a great pleasure to anyone to know that his work was appreciated. Personally he was so constituted that he must always do his best, whether his work was appreciated and paid for or not, but their kindness to him would, if necessary, be an incentive to do his best for them and the profession to which they belonged. He wanted to be an optimist, and he should like to say that he thought the National had got a good restart in having such a really live working honorary secretary as Mr. Buxton. The success of any institution or association depended to a very large extent on the Secretary, and he was sure their profession was to be congratulated on the new secretary of the N.V.M.A. He personally welcomed him as a colleague, and he could promise Mr. Buxton anything he could do to help him he would be only too pleased to do. (Applause.)

Mr. J. BASIL BUXTON proposed the health of the Chairman in another happily-phrased speech, and with Mr. McIntosh's reply the proceedings terminated.

JAS. T. ANGWIN,
Hon. Sec.

Royal College of Veterinary Surgeons.

A special meeting of the Council was held at the College, 10 Red Lion Square, London, W.C.1, on Friday, February 4th, 1921, when there were present Mr. G. A. Banham, Maj.-Gen. Sir L. J. Blenkinsop, Messrs. J. B. Buxton, J. H. Carter, J. McI. McCall, Sir J. M'Fadyean, Messrs. W. J. Mulvey, T. S. Price, E. S. Shave, S. H. Slocock, and J. Willett.

1.—*Apologies for Absence.*—Apolgoies for absence were received from Mr. G. P. Male, Dr. O. Bradley, Major A. Gofton, and Mr. Clarkson.

2.—*Chairman.*—In the absence of the President, Mr. Mulvey was voted to the chair.

3.—*Minutes.*—The minutes of the previous meeting were taken as read and confirmed.

4.—*Bye-laws.*—Mr. BANHAM: I beg to move that the following bye-laws, which were adopted at the special meeting of the Council on January 27th, be confirmed:—

That the matriculation examinations in the Faculties of Arts, Science, or Medicine of, and all examinations accepted in lieu thereof by, any University in the United Kingdom of Great Britain and Ireland, be accepted forthwith as satisfying the requirements in general education.

That the higher and intermediate certificates of the Scottish Education Department be accepted forthwith as satisfying the requirements of general education, provided the certificate contains English, mathematics, science, and a language.

Mr. PRICE: I beg to second that.

Mr. WILLEIT: May I ask whether the General Medical Council recognises the intermediate certificate of the Scottish Education Department?

The SECRETARY: Yes.

Maj.-Gen. Sir Layton BLENKINSOP: The General Medical Council recognises the examination for the present, but their recognition will cease after January, 1923.

The CHAIRMAN: They do recognise the certificate, and we can pass the bye-law. If necessary, the question can come up again in 1923.

The motion that the bye-laws be confirmed was then put and carried.

5.—Special bye-laws under Section (2) 5 of the Veterinary Surgeons Act (1881) Amendment Act, 1920:—

Sir John M'FADYEAN: I beg to move that the following bye-laws, which were adopted at the special meeting of the Council held on January 27th be confirmed:—

(1) The annual fees authorised in Section 2 of the Act shall be collected by the Secretary under the direction of the Council of the College, and he shall take the necessary proceedings to enforce the payment of any arrears under the like direction.

(2) The money arising from the said fees shall be applied as follows:—

(*a*) In payment of the expenses of collecting and enforcing payment and auditing the accounts herein mentioned.

(*b*) In payment of the cost of printing and publishing the Register of Veterinary Surgeons and of distributing the same to members in accordance with Section 2 (i) of the Act.

(*c*) In payment of expenses incurred in conducting examinations, and of prosecutions and enquiries authorised by statute.

(*d*) In carrying out such other objects or duties as may be considered by the Council of the College beneficial to the Veterinary Profession and necessary for the promotion of the art and science of veterinary medicine and surgery.

(3) Separate accounts shall be kept of the money received from the said fees and the disposition thereof, which accounts shall be audited yearly by a Chartered Accountant. The rights and duties of such Auditor shall be considered as defined by Section 112 and 113 of the Companies (Consolidation) Act, 1908.

Mr. PRICE: I beg to second the confirmation of these bye-laws.

The resolution, on being put to the meeting, was carried unanimously.

The SOLICITOR: It will now be necessary to order the common seal to be affixed to the bye-laws passed to-day.

The CHAIRMAN: I move that the Seal of the College be affixed to the bye-laws which we have just confirmed (carried unanimously).

6.—*Parliamentary and General Purposes Committee.*—The Secretary read the following report of the meeting of the Parliamentary Committee held earlier in the afternoon, which was received and adopted:—

(1) *Chairman.*—In the absence of the Chairman, Mr. Mulvey was voted to the chair.

(2) *Minutes.*—The minutes of the previous meeting, having been submitted to the Council, were taken as read and confirmed.

(3) *Dangerous Drugs Regulations.*—Correspondence from Home Office and the Pharmaceutical Society with regard to the draft regulations under the Dangerous Drugs Act, 1920, was submitted, and the draft regulations were considered.

It was resolved:—

(*a*) That representations be made to the Home Office that the draft regulations require amendment so as to provide that duly qualified veterinary surgeons should, in respect of the prescribing, dispensing, and administration of medicines containing dangerous drugs for diseased animals, be placed on the same footing as are medical practitioners in respect of the use of these drugs in human medicine.

(*b*) That the Solicitor be requested to draw up suggested amendments for submission to the Home Office in order to carry out the above recommendations.

(*c*) That the Secretary be instructed to express to the Pharmaceutical Society the Committee's thanks for their communication, and to state that the Committee, while approving of the suggestion that the regulations should be amended, has decided to recommend the Council to take independent steps to lay its views before the Home Office.

(4) *Motor Taxation.*—A letter was received from the North of Ireland Veterinary Medical Association, conveying a resolution passed by the Association with regard to the new motor taxation. The Secretary was instructed to communicate with the Association on the matter.

Notes and News.

Royal College of Veterinary Surgeons.

The Secretary begs to acknowledge the receipt of the following subscriptions to the R.C.V.S. for the present year.

These subscriptions and any similar subscriptions received since January 1st, will be credited as the annual fee payable under the Veterinary Surgeons' Act, 1920, and due on April 1st. A free copy of the register is sent to subscribing members.

It is not proposed to continue the publication of these lists after April 1st, when the payment of the annual fee becomes due.

	£	s.	d.
Bailey, R. J., Kirkham	1	1	0
Begg, H., Hamilton	1	1	0
Bibbey, H., Winsford	1	1	0
Blackburn, J., Masham	1	1	0
Blue, A. P., Glasgow	1	1	0
Bolton, W. T., Richmond, Yorks	1	1	0
Bowes, H. G., Leeds	1	1	0
Bloye, P. W., Plymouth	1	1	0
Cartwright, C. W., Dyserth	1	1	0
Catmull, E. J., London, S.W.2	1	1	0
Catmur, R., Abingdon	1	1	0
Chadwick, J. B., Manchester	1	1	0
Clough, F. W. S., Halifax	1	1	0
Conchie, J. Wright, Kidderminster	1	1	0
Cooper, H., London, N.W.1	1	1	0
Crook, L., Oldham	1	1	0
Dobbyn, A. J., Waterford	1	1	0
Giblin, M. T., Rochdale	1	1	0
Gooch, F. L., Stamford Baron	1	1	0
Hicks, T., Sleaford	1	1	0
Howard, P. J., Ennis	1	1	0
Howie, G., Alford	1	1	0
Hughes, J., Welshpool	1	1	0
Jones, H. L., Beira, P.E.A.	1	1	0
Jordan, W. D., Clydach	1	1	0
King, G. E., Abingdon	1	1	0
Leyshon, W. J., Barry, Glam.	1	1	0
Lloyd, L. W. Wynn, Carnarvon	1	1	0
Mason, J. H., Glasgow	1	1	0
Parker, T., Newcastle-on-Tyne	1	1	0
Palmer, R. B., Warwick	1	1	0
Petrie, W. S., London, S.W.1	1	1	0
Pottie, J. D., Greenock	1	1	0
Rice, A., J.P., London, S.W.1	1	1	0
Secker, B. L., Malvern Links	1	1	0
Simons, G., Lancaster	1	1	0
Smith, J., Wigan	1	1	0
Taylor, F. B. O., Warwick	1	1	0
Townsend, C. W., Long Stanton	1	1	0
Weir, G. W., Glasgow	1	1	0
Whittam, B., Bury	1	1	0
Wishart, D. G., Kilmarnock	1	1	0
Yates, G., Harrow	1	1	0
Previously acknowledged	545	5	0
	£590	8	0

Victoria Veterinary Benevolent Fund.

A quarterly meeting of the Council of the Fund was held at 10 Red Lion Square, London, W.C.1, on Thursday, January 6th, 1921, when the following members were present. Mr. S. H. Slocock in the chair, Major J. Abson, Mr. G. A. Banham, Col. J. W. Brittlebank, Messrs. J. B. Buxton, P. J. L. Kelland, J. W. McIntosh, T. S. Price, E. A. West, and G. H. Wooldridge.

1.—*Apologies for Absence.*—Apologies for absence were received from Mr. Gooch, Mr. J. Ewing Johnston, Mr. T. M'Guinness, Mr. C. W. Townsend, and Mr. W. J. Young.

2.—*Minutes.*—The minutes of the previous meeting, having been published, were taken as read and confirmed.

3.—*Correspondence.*—(*a*) The Secretary submitted a letter from Mr. Fraser Meadows conveying a donation of £50 from the estate of the late Mr. Daunt Meadows, M.R.C.V.S., I.C.V.D.

It was resolved that the hearty thanks of the Council be expressed to Mr. Fraser Meadows, and that he be elected a life member of the Fund.

(*b*) A letter was received from Mr. C. Huston suggesting that a veterinary surgeon in each large town should be asked to act as an agent of the Fund to collect subscriptions from other members of the profession.

It was resolved that Mr. Huston be thanked for his useful suggestion, and that he be informed that the Council will take the matter into consideration.

(*c*) A letter was received from Col. H. A. Reid, of the Veterinary Laboratory, Wellington, New Zealand, enclosing a copy of a circular letter he had issued to the members of the profession practising in New Zealand, urging upon them that they should subscribe to the Fund.

It was resolved that a cordial vote of thanks be accorded to Colonel Reid for his sympathetic interest in the Fund in issuing his circular, which the Council hope will meet with a good response.

4. *Hunting Memorial Fund.*—A communication was received from Mr. H. Gray, transferring to the Fund the sums collected by the Hunting Memorial Committee and requesting the Council to accept the same, and to hand over to the children of the late Mr. William Hunting the interest received from the capital invested. On the death of the said recipients the Hunting Memorial Committee desire that the capital should be retained by the Victoria Veterinary Benevolent Fund and used in the same manner as the Clement Stephenson Fund.

It was resolved that the thanks of the Council be expressed to Mr. Gray as Secretary of the Fund, and that he

be informed that the desires of the Hunting Memorial Committee will be carried out.

5.—*Secretary's Report.*—The Secretary submitted the following report, which was adopted:—

Since the previous quarterly meeting the following donations and new subscriptions have been received:—

	£	s.	d.
Estate of the late Daunt Meadows, I.C.V.D. ...	50	0	0
Bolton's Cinema	33	12	0
W. C. B. Revill	0	10	6
Messrs. Woodger and Broad (Sister's donation)	2	2	0
A. E. Payne	0	10	6
W. W. Smart	1	1	0
G. Thatcher and Son	2	2	0
W. L. Sinton	1	0	0
Increased subscriptions:—			
Palmer and Taylor	2	2	0
H. Pollard	1	0	0
W. H. Wilkinson	0	15	0

I regret to have to report that forty-eight members have omitted to pay their subscriptions during 1920, although they have been twice reminded.

Your instructions are required for the investment of the sum of £205, being the balance in hand in the Donations Account.

Hunting Memorial.—The Hunting Memorial Committee have handed over to the care of the Fund:—

£300 War Bonds;
£15 15s. 9d. Inscribed War Stock, and
£43 0s. 1d. in cash.

This sum has been invested in the purchase of £50 1s. 8d. Inscribed War Stock. The total amount of the Hunting Fund is therefore £365 17s. 5d., bringing in an annual income of £18 5s. 7d. The Hunting Memorial Committee request that the Council will pay over this sum to the children of the late Mr. Hunting during their lifetime. The Fund is afterwards to be used in the same manner as the Clement Stephenson Fund.

The following sums have been received from collecting boxes:—

	£	s.	d.
General L. J. Blenkinsop, K.C.B.	1	15	0
Gen. E. R. C. Butler	1	0	0
E. Whitley Baker	0	9	0
J. L. Cormack	1	6	0
J. W. Conchie	0	17	6
Dawes and Son	10	10	6
E. R. Edwards	1	1	0
A. B. Fewings	5	9	2
J. Martin	1	1	0
A. M. Munro	13	9	3
W. J. Mulvey	0	15	0
Col. A. Olver	0	3	6
A. Renfrew	0	10	6
Royal (Dick) Veterinary College	0	14	0
S. H. Slocock	1	1	0
P. J. Simpson	1	'2	2
Shipley and Son	0	10	0
Col. W. Dunlop Smith	0	11	6
J. Willett	1	5	0
A. M. Woodward	0	10	0
W. H. Wortley	1	1	0
W. Jackson Young	2	14	9

6.—*Investments.*—It was resolved that in accordance with the Articles of Association the sum received during 1920 as donations be invested in the purchase of 4 per cent. Funding Loan.

7.—*Annual Report.*—It was resolved that the preparation and printing of the annual report be left in the hands of the Secretary, with instructions to obtain as low an estimate as possible.

Glasgow Veterinary College.

Death of Mr. Hugh Duncan, Secretary.

We regret to announce the death of Mr. Hugh Duncan, a leading member of the legal profession in Glasgow, which took place on January 28th.

For many years Mr. Duncan's political activities were extensive and until his death he was a trusted and respected counsellor of the Unionist Party in the West of Scotland. He acted successively as party agent for Lord Dunedin, Lord Salvesen, Colonel Guy Spier, and Sir Harry Hope. Only considerations of business and health led him to decline to act as agent for other distinguished politicians, notably Mr. Bonar Law, with whom he was linked by ties of close friendship.

On several occasions Mr. Duncan was pressed to become a candidate for Parliamentary honours, but he preferred to serve his party in other ways and to carry on his professional and other work.

He held official appointments in a large number of institutions and associations, including the Glasgow Veterinary College, the interests of which he promoted with unremitting zeal. The Governors of the Veterinary College are well aware of the debt they owe to Mr. Duncan for his persistent efforts, which were crowned with success some months ago, to secure Government recognition of the College as a teaching and research centre.

Mr. Duncan was a man of refined and sensitive nature, who found his chief recreations in art and literature of which his knowledge was profound and his appreciation keen. By reason of the singular charm of his character and his sunny attractive personality Mr. Duncan made a wide circle of friends by whom, and by all with whom he came in contact, he was held in the highest regard and esteem.

As the son of a well-known Buteshire farmer, Mr. Duncan was keenly interested in all agricultural matters, and the veterinary profession is under a deep debt of gratitude for all that he has done for them in the West of Scotland. His is a good record of work well done.

At a meeting of the R.A.S.E., on February 2nd, Mr. Thomas Blundell Turner, of Peterborough was appointed secretary, in succession to Mr. Thomas M'Row, who is retiring.

Sir Daniel Hall and Research.

At a meeting of the Former Students' Association of the North of Scotland College of Agriculture, held at Aberdeen, on January 28th, Sir A. Daniel Hall, Permanent Secretary of the Board of Agriculture and Fisheries, delivered a lecture on "The Bearing of Research on Current Farm Practice." After having pointed out that scientific research was essential to the progress of agriculture, he proceeded to explain the schemes for research directly bearing upon agriculture which had been organised for the United Kingdom, and dealt with the work carried out at the Institutes for Research in Animal Nutrition at Cambridge and Aberdeen, and the stations for research into more purely agricultural problems at Rothamsted, East Anglia, Aberystwith, and Oxford.

In connection with animal nutrition, what the research stations had to supply was a set of real growth curves showing for each stage of the animal's development the relation between the food consumed, the live and dead weight, the useful meat and fat, and the offal. Such curves did not as yet exist, and the fattening process was probably in consequence often pushed to a wasteful point. With more knowledge we could produce meat in the most economic fashion.

Referring to the matter of animal diseases generally, he expressed the opinion that investigation was not being pushed ahead fast enough. There were few things of greater moment to the farming community than the more systematic study of animal disease. This ought to be taken up from a bigger and broader point of view than had been the case. They hoped to see an institute, or some co-operation on the part of agricultural, veterinary, and medical schools that would take up the subject of comparative pathology and study the diseases of men and animals at the same time. Human medicine and the medicine of animals were approaching each other and becoming interlinked in all directions. A great deal of animal physiology wanted study; and this was a branch

from which the farmer was entitled to claim more assistance than he could get at present.—*N. B. A.*, February 3rd.

The Report on the Acreage and Live Stock Returns for 1920. "Perhaps the most striking feature in the returns in 1920 was the heavy reduction in the number of cattle and sheep. The decline in the number of cattle was about 650,000, which was mainly due to a large reduction in the number of calves being reared as a result of the disproportionately high prices which were paid for calves for slaughter during the year. The number of cows and heifers in milk or in calf was, however, still at such a level that the herds of the country could be brought up to their recent numbers fairly quickly if farmers are convinced that the prices of meat and milk are such as will yield a moderate return for the capital and energy which must be invested in the enterprise. The number of sheep last year was the smallest on record, and the restoration of the flocks of the country to their former level must of necessity be slow as the ewe flock was correspondingly small; but the decontrol of prices of fat sheep which took place during 1920, combined with the high prices which flock-masters received for the wool clip of 1920, should encourage more breeding. Pigs, on the other hand, were increased in numbers, there being 15½ per cent. more breeding sows in England and Wales in 1920 than in 1919."—*Journal Ministry Agriculture*, February, 1921.

The highest individual price paid for pedigree cattle last year was 6,600 guineas for a Shorthorn, the Hereford breed coming second with 5,500 guineas. The top price for sheep was 1,100 guineas, paid for a Border Leicester, and for pigs 720 guineas for a Large White.

The number of live stock on American farms decreased during 1920 by ten million head under 1919.

Forty million dollars' worth of registered Herefords were sold in the United States and upwards of 100,000 Hereford calves were recorded in America in 1920.

For not isolating a cow suffering from tuberculosis mastitis from a herd, the Sheffield Corporation prosecuted Vaughan Taylor, owner of stock at Ambergate and F. Critchlow, the bailiff. The defendant Taylor said he could not isolate the cow because he had no room. Each defendant was fined 40s.

Outbreaks of Animal Diseases in the Union of South Africa.

October, 1920.

Disease.	Transvaal.	Natal.	Cape.	Orange Free State.	Transkei.	Total No. of Outbreaks. During Oct., 1920.	During Sept., 1920.	From 1st April, 1920, to 31st Oct., 1920.
East Coast Fever	9	—	—	—	1	10	11	131
Mange	7	—	11	1	7	26	78	252
Anthrax	74	5	10	23	27	139	149	938
Dourine	—	—	7	—	—	7	7	34
Glanders ...	—	—	1	—	—	1	8	19
Epizootic Lymphangitis	—	—	—	—	—	—	6	9
Tuberculosis ...	—	—	—	—	—	—	4	6
Swine Fever ...	—	—	—	—	—	—	—	1

"Grass Sickness" in Scotland.

At a meeting in Edinburgh of the directors of the Highland and Agricultural Society, the Science Committee reported with regard to "grass sickness" investigation that a letter was submitted from the Board of Agriculture in which it was stated that it appeared to the Board that a continuation of the investigation into the causes of the disease of horses known as "grass sickness" was a matter which might be considered as falling within the scope of the Joint Committee of the Association for Research into Animal Diseases, and inquiring whether it would not be possible to postpone further investigation until the association was in a position to proceed with it.

The committee decided to recommend that a reply be sent to the Board that the directors agree with the view that any future investigations into animal diseases may properly be referred to the Joint Committee, but in the interests of the continuity of the present investigation, and in view of the necessity for immediate action, the directors thought that this investigation should be completed by the present investigators entrusted by the societies with the research.

The directors further pointed out that this investigation would be completed within the current year, and that steps must be taken immediately to make the necessary arrangements. Should the Board of Agriculture have difficulty in accepting the above view, the directors asked the Board to receive the following deputation:—Sir David Wilson, Mr. David Ferrie, Mr. Charles Douglas, D.Sc., C.B., and Dr. J. F. Tocher. The report was agreed to, on the motion of Sir David Wilson.

Dr. Tocher, referring to the investigations conducted by the Society into the causes of the disease of horses known as "grass sickness," said that "grass sickness" was a misnomer, that the cause of the disease was bacterial in origin, and that the organism was an anærobic bacillus, causing symptoms like those produced in botulism.—*The Aberdeen Journal*, January 7th, 1921.

Clydesdale Horse Society.

At a meeting of the Council of the Clydesdale Horse Society, on the motion of Mr. Kilpatrick, Professor John R. M'Call was appointed veterinary inspector to the society in connection with the Cawdor Cups in 1921. It was reported that Mr. Andrew Robb, senr., M.R.C.V.S., would be chief inspector at Glasgow Stallion Show.

Discussing the question of unsoundness in mares, Mr. Geo. A. Ferguson outlined what he said might be regarded as an "ambitious" scheme, but one which in the accomplishment might effect an improvement in the general efficiency of the breed, *i.e.*, the removal of unsoundness in mares. After comparing the English returns with the Scottish figures relative to diseases in horses, Mr. Ferguson discussed various suggestions that had been made. Mares might be examined by a recognised veterinary surgeon and a certificate with her entry in the Stud Book. There was, however, the difficulty of an animal examined at an early age which on re-examination at a later period proved to be unsound. *Another course might be for the Clydesdale Society to refuse the registration of mares suffering from stringhalt or shivering.* He thought it would be a magnificent thing for the breed if they could hall mark the pedigree animals as sound. It was rather an ambitious scheme to look at, but it could be done. He suggested a show of hands so that the voice of the meeting might be taken on the principle of examining breeding mares for soundness. The members present indicated that they were generally in favour of a voluntary system of inspection of mares. After a free expression of opinion it was agreed, on the motion of Mr. Ferguson, seconded by Mr. Hannah, that a discussion on the subject, but without a motion binding the society to any particular line, should take place at the annual general meeting in March.

Kerries as Milkers.

In the third volume of the Register of Dairy Cows just issued by the Ministry of Agriculture for England, particulars are given respecting the yields of the only three Kerry cows entered, as follows:—

Cow, ear No. X39/3, gave 8,698 lbs. of milk in 334 days.
Cow, ear No. X39/5, gave 9,583 lbs. of milk in 363 days.
Cow, ear No. X39/6, gave 10,563 lbs. of milk in 351 days.

The yields bear out the claim made for the Kerry as one of the most economical producers of milk. The average Kerry cow does not usually weigh more than about 7 cwt. live weight, and her cost of upkeep is correspondingly low; the yields quoted are, indeed, remarkable.

In Ireland the Kerry herds, with few exceptions, are being systematically tested and the authenticated records are published annually in the Herd Book issued by the Royal Dublin Society. It is to be hoped that similar action will be taken by all owners of Kerry herds in Great Britain, as the publication of reliable milk records must be regarded as the best means of bringing the merits of this wonderful little breed under general notice.

Instruction in Tropical Veterinary Medicine.

Courses of instruction in this subject commenced at the Alfort Veterinary School, Paris, on January 4th. Besides students undergoing training for work in the French colonies there were four from other countries (three from Brazil and one from Armenia). The names of the staff of teachers in this special branch of veterinary science were published in the *Record* of January 22nd.

The Paris *Temps* of January 12th published the following information under the title "Colonial Veterinary Medicine" —"It is beyond doubt that stockbreeding plays and will yet play to a greater and greater degree, in conjunction with agriculture, a rôle of the highest importance in the development of our colonies. (Nearly all the French colonies are tropical or sub-tropical). In the same way as there exists a colonial human medicine, it is necessary that instruction in exotic stockbreeding and veterinary medicine should be created. This instruction has just been instituted at the National Veterinary School, Alfort. The teaching will bear upon the diseases peculiar to animals in tropical countries and on the best methods of breeding and raising these animals."

All communications and enquiries should be addressed to Professor Panisset, care of the Director of the Tropical Medicine Class, National Veterinary School, Alfort, Paris.

The Draft Regulations under the Dangerous Drugs Act.*

The following letter from Sir Edward Troup, Permanent Under-Secretary to the Home Office, appeared in the *Times* of February 9th:—

To the Editor of "The Times."

Sir,—As certain misapprehensions appear to be entertained with regard to the draft regulations which have been issued by the Home Office under the Dangerous Drugs Act, 1920, I ask room in your columns for the following statement:—

1. The regulations have not yet been made. They have been issued in draft in pursuance of the Rules Publication Act, 1893, in order that all persons and bodies interested may have the opportunity of considering them and submitting any representations or suggestions before they are finally made. All such representations or suggestions will be carefully considered.

2. The regulations have not, as has been suggested, been issued without previous consultation with the interests most directly concerned. A preliminary draft was submitted to the Pharmaceutical Societies of Great Britain and Ireland, the General Medical Council, the Royal College of Physicians, and the Royal College of Surgeons.

3. In several important respects the draft regulations have been misunderstood. It has been suggested, for instance, that a doctor is required on each occasion on which he gives a hypodermic injection of morphia or otherwise administers any of the drugs to enter the fact in a book. This is not so. The regulations require certain records to be kept in cases where drugs are *supplied*, and these apply to doctors who supply medicines to their patients, as well as to chemists who supply them on a doctor's prescription. But there is no requirement that a record has to be kept of a personal administration of the drugs by a doctor.

4. The regulations are issued in order to carry out our obligations under the International Opium Convention, the acceptance of which was made one of the conditions of peace by Article 295 of the Treaty of Versailles, and they will be made under the express powers given for the purpose by Parliament in the Dangerous Drugs Act of last Session. The terms of the Convention require the Government to limit the use of the drugs in question (opium, morphia, cocaine, etc.) to legitimate medical and scientific purposes. The regulations seek to carry this out by restricting sales to (1) persons licensed for the purpose; (2) persons belonging to certain professions who are given a general authorization—*e.g.*, doctors, dentists, pharmaceutical chemists, veterinary surgeons, etc.; (3) persons for whom the drugs have been prescribed by a duly qualified medical practitioner.—Your obedient servant,

EDWARD TROUP.

Home Office, Whitehall, S.W.1, February 8th.

In the *Times* of the following day Sir William S. Glyn-Jones, secretary of the Pharmaceutical Society, is stated to have said that the form the "consultation" (referred to in paragraph 2 above) took in the case of the Pharmaceutical Society of Great Britain was that the Home Office sent them a preliminary draft of the regulations. In a letter dated December 6th the society replied, taking fundamental objection to the regulations as drafted. They suggested that, before further considering the draft, the Home Office or the Ministry of Health should set up a committee to deal with the objections that had been raised. They pointed out that the delay could easily be defended in view of the fact that the principal preparations affected by the Dangerous Drugs Act had already been brought within Part I. of the schedule of the Pharmacy Act.

The reply to this request was a letter, dated December 7th, saying it was not possible to delay the publication of the draft, which subsequently appeared practically unamended. That, said Sir William Glyn-Jones, was the amount of consultation with the Pharmaceutical Society of Great Britain. The attitude of the Irish Society was shown by the fact that they were appealing for help to get the regulations withdrawn and radically amended. He did not know whether the "consultation" with the other organizations mentioned by Sir Edward Troup had been on the same lines, but he would be surprised if the draft regulations met with their approval.

In a further letter to the Home Office, dated January 22nd, the Pharmaceutical Society of Great Britain expressed regret that no opportunity had been given to their committee to place their suggested modifications before the Home Secretary. The letter said:—"The society have never contested the necessity, in view of the convention, for certain regulations being made, but the committee deplore the fact that the draft regulations bear on their face convincing evidence that the Home Office are without the knowledge of the conditions surrounding the supply of the substances dealt with or that they have prepared the regulations with a deliberate and ruthless disregard of those conditions. It is, in the opinion of the committee, unfortunate that the growing and very natural feeling of resentment on the part of all sections of the community against Government interference should be accentuated by the publishing of draft regulations which involve the maximum of inconvenience without achieving the objects they are intended to secure. The committee are of opinion that the regulations as drafted cannot possibly be complied with."

With regard to the point made by Sir Edward Troup that the regulations are issued in order to carry out our obligations under the International Opium Convention, Sir William Glyn-Jones pointed out that Article 10 of the Convention expressly states that the contracting parties shall use their best endeavours to adopt certain measures "unless regulations on the subject are already in existence." In a letter to the Home Office, dated February 3rd, the society wrote:—

*Reprinted by the courtesy of the Editor of *The Times*.

"The Home Office is aware that statutory regulations governing the sale of these substances are contained in the Pharmacy Acts and have existed and been in force since 1868, and at the present time the supply of all the substances covered by the Dangerous Drugs Act are the subject of the most stringent conditions and safeguards. This fact seems to have been completely ignored by the framers of the draft regulations."

He added that Sir Edward Troup had declared that the regulations were misunderstood, but if that interpretation was correct, it showed that they had been badly drafted. The overwhelming opinion among doctors, veterinary surgeons, pharmacists, and in public hospitals was that the regulations as drafted could not be worked. The Pharmaceutical Society had submitted to the Home Office detailed criticism of the regulations, and, in conjunction with the British Medical Association and other organizations in Great Britain and Ireland, was approaching the Home Secretary to ask him to receive a deputation to urge the withdrawal of the draft regulations and the substitution of others, drawn up after due consultation with representative bodies.

The council of the Metropolitan Counties Branch of the British Medical Association have issued through their two hon. secretaries a protest against the draft regulations under the Dangerous Drugs Act, as notified in the *London Gazette*, and are communicating with the Home Office and local members of Parliament on the subject.

The council base their objection on the grounds that nobody who represents the general views of the medical profession has been consulted in drawing up the regulations, although the members are vitally affected by their working, and that if the regulations become law they will render the daily work of medical practitioners almost intolerable and interfere most gravely with their powers of relieving cases of acute illness.

It is also contended that the regulations will very seriously increase the cost to the public of many necessary medicines.—*The Times*, February 11th.

Army Veterinary Service.

THE *London Gazette*, WAR OFFICE, DECEMBER 20TH.

REGULAR FORCES.

Major E. B. Bartlett to retain the acting rank of Lt.-Col. on appointment as D.D.V.S. (October 1st, 1919); Major E. B. Bartlett relinquishes the acting rank of Lt.-Col. on ceasing to hold the appointment of D.D.V.S. (July 20th) (substituted for the notification in *Gazette*, October 25th).

ESTABLISHMENTS. — Cavalry School. — The following temporary appointment is made :—

Veterinary Officer.—Capt. E. C. Doyle, D.S.O., R.A.V.C., vice Bt. Lt.-Col. H. S. Mosley, D.S.O., R.A.V.C. (November 1st).

February 8th.—Capt. C. R. Chadwick, T.F., to be acting Major (March 16th to December 25th, 1919).

February 11th.—REGULAR FORCES.—Lt.-Col. C. B. M. Harris, D.S.O., F.R.C.V.S., having attained the age limit of liability to recall, ceases to belong to the Reserve of Officers (January 13th).

TERRITORIAL FORCE.—Capt. J. B. Walker, O.B.E., late R.A.V.C., to be Capt., prec. September 12th, 1915, next below Capt. W. F. Wilson (February 12th).

Capt. J. R. Conchie is appointed to command a Mobile Veterinary Section (February 12th).

ERRATA.

Mr. F. T. HARVEY'S clinical note, February 5th, p. 130, line 6: *read* "vegetable tonics *were* prescribed."

Same author's general article, February 12th, p. 139, col. 1, para. 2, line 7: *read* "tried" for "tired"; and col. 2, para 5, line 19: *read* "*doubtless* played" for "doubly played."

P. 142, col. 1, para. 9, line 8: *read* "member for his *proposer*" for "member for his professor"; and col. 2, para. 4, line 2: *read* "If I have *inflicted* wounds" for "If I have infected wounds."

Diseases of Animals Acts, 1894 to 1914. Summary of Returns.

Period.	Rabies. Cases Confirmed. Dogs.	Rabies. Cases Confirmed. Other Animals.	Anthrax. Outbreaks confirmed.	Anthrax. Animals attacked.	Foot-and-Mouth Disease. Outbreaks confirmed.	Foot-and-Mouth Disease. Animals slaughtered as diseased or exposed to infection.	Glanders (including Farcy).* Outbreaks reported by the Local Authorities.	Glanders (including Farcy).* Animals attacked.	Parasitic Mange. Outbreaks reported by the Local Authorities.	Parasitic Mange. Animals attacked.	Sheep Scab. Outbreaks reported by the Local Authorities.	Swine Fever. Outbreaks confirmed.	Swine Fever. Swine slaughtered as diseased or exposed to infection
GT. BRITAIN.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Week ended 12th February, 1921	2	...	10	10	1	66	...	...	83	143	25	23	5
Corresponding Week in 1920	...	...	9	9	2	220	1	5	154	270	21	40	20
Corresponding Week in 1919	1	1	3	13	2	190	...	...	208	387	15	18	3
Corresponding Week in 1918	...	...	9	9	....	...	...	...	177	330	24	10	3
Total for 7 weeks, 1921	13	1	102	123	23	2209	2	4	650	1053	232	172	40
Corresponding period in 1920	2	...	68	77	28	1640	6	13	1140	2119	177	304	114
Corresponding period in 1919	16	2	29	43	16	990	...	...	1230	2554	138	124	39
Corresponding period in 1918	...	...	50	59	...	...	2	3	1096	2155	150	106	33
IRELAND.									Outbreaks				
Week ended 5th February, 1921	...	...	...	...	1	4	...	...	...		5	1	6
Corresponding Week in 1920 ...	...	...	...	...	...	...	...	...	1		9	...	...
Corresponding Week in 1919 ...	...	...	...	...	...	...	...	...	6		7	2	...
Corresponding Week in 1918 ...	...	...	...	...	...	...	...	...	3		16	...	...
Total for 6 weeks, 1921	...	...	...	...	2	39	...	...	14		64	6	43
Corresponding period in 1920 ...	...	...	...	...	...	...	1	2	22		60	1	4
Corresponding period in 1919 ...	...	...	...	...	...	...	...	...	17		78	7	13
Corresponding period in 1918 ...	...	...	...	...	...	...	...	...	24		74	1	1

NOTE.—The figures for the current year are approximate only. *Excluding outbreaks in Army horses.

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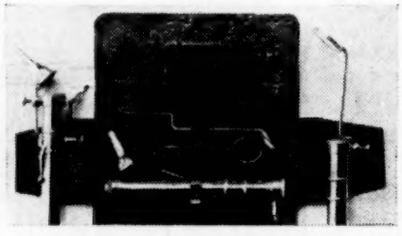

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